Sg2 Orthopedics: The Next 5 Years
Academic Orthopaedic Consortium

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enables health care executives to make better, faster strategic decisions more cost-effectively through our unique combination of analytics and expertise—delivered via membership, consulting and education.

YOUR PARTNER

We are committed to being:

- Empowering
- Collaborative
- Provocative
- Future focused yet practical

OUR PURPOSE

To catalyze the transformation of health care delivery so our members thrive and provide exceptional, cost-effective care to the patients they serve
Agenda

Orthopedics & Spine Forecast & Trends

Programs in Transition

Strategies for Capturing Smart Growth
2019 Ortho and Spine Surgery 5 Year Forecast

- Elective IP & OP Hip and Knee Replacement +38%
- IP & OP Shoulder Replacement +62%
- OP Sports Medicine Procedures and Arthroscopy +11%
- IP & OP Spine Surgery +13%

- Aging, obese and active populations drive growth across orthopedics and spine surgery.
- Transition outside the hospital accelerates, resulting in acuity mix changes.
- Efforts escalate to prove value: outpatient price and quality comparisons emerge, including nonsurgical spine care.
- Shifting reimbursement portfolios challenge efficiency and access across the System of CARE.
- Bundled payment, provider alignment opportunities emerge outside the hospital walls.
- Competition escalates to meet consumer priorities, resulting in enhanced access, experience and personalization of services.

**Note:** Analysis excludes 0–17 age group. Elective hip and knee replacement includes primary hip/knee replacement and partial knee replacement for Osteoarthritis CARE Family only. Shoulder replacement includes all orthopedic CARE Families. OP sports medicine major procedures and arthroscopy include endoscopy—arthroscopy, major procedures, and open treatment of fracture for the Musculoskeletal Injury (except for Other) and Nonspecific Musculoskeletal Pain CARE Families, ACL repair for Musculoskeletal Injury—Knee CARE Family; and rotator cuff repair for Musculoskeletal Injury—Shoulder/Elbow/Upper Arm CARE Family. IP and OP spine surgery forecast includes IP major therapeutic and OP major procedures groups. ACL = anterior cruciate ligament. **Sources:** Impact of Change®, 2019; HCUP National Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP) 2018. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight; 2017. The following 2017 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2019; Sg2 Analysis, 2019.
What Are the Hot Topics in the HOPD and ASC Space?

- Total hip replacement moved off IP-only list.
- Total knee replacement, PCI (both coronary angioplasty and stents) added to ASC covered list.
- Lumbar spinal fusion moved off IP-only list.
- Site-neutral payment for non-grandfathered off-campus HOPDs - 60% pay cut
- Federal district court judge ruled that CMS overstepped its authority when it expanded site-neutral payment for clinic visits to all off-campus HOPDs. Payment cuts for 2020 remain.

**OUR PERSPECTIVE?**

CMS and payers will continue to push to lower-cost sites of care. Health care providers should focus on ambulatory sites of care and prepare for changes in care delivery, acuity mix, competition, quality comparison and margin management.
Orthopedics conditions are ripe for the perfect “migration storm”

- The CMS reimbursement gap between sites of care for total joint replacement narrows
- Payers partner with providers to accelerate bundled payment and site of care shifts
- Outpatient quality measurement looks to compare HOPD and ASC
- Payers look to move elective orthopedics to lower cost settings through site-of-care reviews

**OUR PERSPECTIVE?**

Anticipate migration of orthopedic procedures from the HOPD to the ASC beyond total joint replacement.
What Is the Latest in Bundled Payment Models?

- Commercial payers and self-insured employers are expanding total joint replacement bundles.
- Medicare 2020 bundled payment for care improvement – advanced (BPCI-A) includes outpatient total knee replacement.

**OUR PERSPECTIVE?**

Expect more bundled payment models incorporating site of care differentials to emerge for providers, payers and, potentially, non–health care entities.
Agenda

Orthopedics & Spine Forecast & Trends

*Programs in Transition*

Strategies for Capturing Smart Growth
Orthopedics System of CARE

Virtual
- Consults
- Follow-up visits
- Virtual rehab

HOPD/ASC
- Arthroscopy
- Complex injections
- Nonfusion and single-level fusion spine procedures
- Partial joint replacement
- Minimally invasive TJR for select patients

Community-Based Care

Self Care
- Information gathering
- Networking

Wellness/Fitness Center
- Medical fitness
- Injury prevention
- Performance enhancement
- Alternative medicine

Urgent Care Center
- Fracture and sprain care
- Medical back pain triage

Care Team Center
- Physician office
- Care team coordination
- Medical management
- Imaging and diagnostics
- Arthrocentesis and injections

ED/Obs Unit
- Diagnosis
- Triage

Hospital
- Trauma
- Multilevel spinal fusions
- Most TJRs and patients with extensive comorbidities

SNF/IP Rehab
- Rehabilitation
- Wound care
- Comorbidity management

OP Rehab
- Prehabilitation
- PT/OT
- Performance enhancement and injury prevention

Post-Acute Care

Acute Care

Home
- Home health
- Self-monitoring, management and injury prevention

ASC = ambulatory surgery center; CARE = Clinical Alignment and Resource Effectiveness; HOPD = hospital outpatient department; obs = observation; OT = occupational therapy; PT = physical therapy; SNF = skilled nursing facility; TJR = total joint replacement.
Majority of Orthopedics and Spine Procedures Are Performed in the Hospital Today

<table>
<thead>
<tr>
<th>Procedure</th>
<th>2019 Volumes</th>
<th>2019 Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knee Replacement</td>
<td>837K</td>
<td>8%</td>
</tr>
<tr>
<td>Hip Replacement</td>
<td>520K</td>
<td>3%</td>
</tr>
<tr>
<td>Revision Knee Replacement</td>
<td>91K</td>
<td>1%</td>
</tr>
<tr>
<td>Revision Hip Replacement</td>
<td>67K</td>
<td>10%</td>
</tr>
<tr>
<td>Cervical Spinal Fusion</td>
<td>244K</td>
<td>7%</td>
</tr>
<tr>
<td>Lumbar/Thoracic Spinal Fusion</td>
<td>257K</td>
<td>3%</td>
</tr>
<tr>
<td>Spinal Decompression/ Laminectomy</td>
<td>575K</td>
<td>19%</td>
</tr>
</tbody>
</table>

Note: Analysis excludes 0–17 age group. Percentages may not add to 100% due to rounding. Knee and Hip Replacement includes Primary Knee Replacement, Partial Knee Replacement and Primary Hip Replacement.

Sources: Impact of Change®, 2019; HCUP National Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP) 2016, Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2017; The following 2017 CMS Limited Data Sets (LDS): Ceridian, DanaherCare, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2019; Sg2 Analysis, 2019.

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Joint Replacements Will Be Evenly Split Across IP and OP Settings Within 10 Years

2029 Forecasted Procedure Breakout

Elective Knee Replacement
- IP: 43%
- Hospital OP/ASC: 57%

Elective Hip Replacement
- IP: 52%
- Hospital OP/ASC: 48%

Drivers Keeping Volume in HOPD
- More favorable reimbursement that offsets high implant cost
- Need for large ORs, recovery space and PT
- High obesity rates and comorbid conditions

Drivers Pushing Volume to ASCs
- Surgeon equity in ASCs
- Physician and patient comfort in off-campus joint replacement
- Bundled payment/payer steerage to COEs

Note: Analysis excludes 0-17 age group. Percentages may not add to 100% due to rounding. COE = center of excellence; PT = physical therapy. Elective Knee and Hip Replacement includes Osteoarthritis CARE Family only Primary Knee Replacement, Partial Knee Replacement, and Primary Hip Replacement.

Sources: Impact of Change®, 2019; HCUP National Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP) 2016, Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2017; The following 2017 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2019; Sg2 Analysis, 2019.

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2029 Volumes
- 1.3M
- 571K
Pulse Check: Which strategy is top of mind for total joint replacement?

A. Physician engagement  
B. Margin management  
C. OP joint replacement program development  
D. ASC acquisition or partnership  
E. Bundled payment positioning

Note: 77 respondents. Sources: Live polling responses on July 17, 2019, webinar; Sg2 Analysis, 2019.
Agenda

Policy & Payment Trends & Implications
Programs in Transition

Strategies for Capturing Smart Growth
Barriers are Diminishing for Medicare as Commercial and Medicare Advantage Payers Lead Shift to ASC

Medicare Patients Moving Out of Hospital Settings

Beyond Medicare

358+ ASCs offering TJR

Medicare Advantage payers (eg, Humana) incentivizing ASC shift through physician gainsharing

22M in Medicare Advantage and growing

2020 DIFFERENCE FROM IP

-3% $12,329
$11,899
-61%
$4,760
$8,609

IP (DRG 470)
Full HOPD (APC 5115)
Site-Neutral HOPD (APC 5115)
ASC Total Knee Replacement (CPT 27447)


"We are moving everything we can out of the hospital."
—Independent Ortho Group Representative

KEY STRATEGY

Maximize physician engagement.

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Eligible Population Expands for Shoulder Replacement, but Barriers Remain for Shift to ASC

IP and OP Shoulder Replacement Forecast
US Market, 2019–2029

Robust growth is driven by improved implant technology and enhanced long-term clinical outcomes.

IP growth will taper off due to an anticipated substantial shift to OP.

ASC shift will be hampered by implant expense, and trauma patients will remain in hospital-based settings.


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Payers Want to Compare HOPD to ASC: Demonstrate the Difference in HOPD Care

Value of HOPD Under Scrutiny

If value (what you get) is the same in the...

HOPD

ASC...

then lower price is the objective.

Change the Conversation

IP and HOPD populations evolve to medically complex, high acuity and resource intensive.

ASC and HOPD Direct Comparisons Coming Your Way

March 2019: NHSN adds Surgical Site Infections for HOPD and ASC.

April 2019: Leapfrog adds ASC and HOPD surveys.

From 2022: CMS adds claims-based ASC measure.*

KEY STRATEGY

Build competency in managing at-risk populations and the medically complex for IP and OP.

Integrate ASC and HOPD quality monitoring to ensure outcomes are maximized across all settings.

Success in OP Bundles and Payer Contracting Requires Innovative Value Offering

Global 1 (G1) Brings Scalable ASC Bundled Payment to Payers

- ASC safety conversation led to bundle request from Blue Shield of California
- Started with 9 bundles, now 72
- Covers ortho, spine, women’s health, ENT
- 125 ASCs in California; 1,400 providers
- Volume has doubled every year since 2015

G1’s ambulatory surgery center bundle saves over $7 million for 70 school systems in California.

Virtual Health Delivers Value to Consumers

Pre-Op Patient Optimization

POST-OP DISCHARGE

PREVENT

Detect Early Deviation From Recovery Expectations (Intervention Here Can Be Most Effective)

Monitor Activity, Range of Motion, Vital Statistics

RECOVERY

Receive Reminders
Connect On Demand for Therapy Instruction and Real-Time Feedback

Set Personal Goals and Recovery Expectations

KEY STRATEGY

Design your bundle strategy to capture growth and alignment across all sites of care.
Get Personal to Succeed in Sports Medicine

OP Sports Medicine and Extremity Volumes
US Market, 2019
Total Volume, 2019: **391M**
10-Year Growth: **9%**

- **10%** Hand/Wrist/Forearm
- **21%** Knee
- **1%** Concussion
- **19%** Lower Leg/Foot/Ankle
- **8%** Nonspecific MSK Pain
- **30%** Shoulder/Elbow/Upper Arm
- **10%** Pelvis/Hip/Femur

**KEY STRATEGY**

**Consumerism:** Access, Experience, Personalization

- Expand **access** to lower-cost sites (OP rehab, urgent care and virtual visits).
- Build **strong partnerships** with community partners and local physicians.
- Deliver **personalized solutions** for the elite athlete population and an aging active population.

**Note:** Analysis excludes 0-17 age group and includes the following Sg2 CARE Families: Concussion, Musculoskeletal Injury—Hand/Wrist/Forearm, Musculoskeletal Injury—Knee, Musculoskeletal Injury—Lower Leg/Foot/Ankle, Musculoskeletal Injury—Pelvis/Hip/Femur, Musculoskeletal Injury—Shoulder/Elbow/Upper Arm and Nonspecific Musculoskeletal Pain. The chart includes advanced imaging (CT and MRI), endoscopy—arthroscopy, major procedures, ACL repair, open treatment of fracture, rotator cuff repair, closed treatment of fracture, arthrocentesis/injections, rehab (PT/OT evaluation and follow-up visits), standard imaging (U/S and x-ray), visits (emergent, E&M, observation, urgent visits), and psych and neuropsych testing for concussions. Total does not equal 100% due to rounding. E&M = evaluation and management, MSK = musculoskeletal, OT = occupational therapy, psych = psychiatric, PT = physical therapy, U/S = ultrasound. **Sources:** Impact of Change®, 2019; OptumInsight, 2017; The following 2017 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2019; Sg2 Analysis, 2019.

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Integrate ASC and HOPD quality monitoring to ensure outcomes are maximized across all settings.

*ASC-17: Hospital Visits after Orthopedic Ambulatory Surgical Center Procedures, NHSN = National Healthcare Safety Network.
Multidisciplinary Team Approach Promotes Provider Efficiency, Drives Procedure Volume and Share Growth in Spine Surgery

The Rise of Non-Surgical Spine

<table>
<thead>
<tr>
<th>IP &amp; OP Spine Surgery 5-Year Forecast</th>
<th>INOVA CASE STUDY</th>
</tr>
</thead>
<tbody>
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<td><strong>+13%</strong></td>
<td><strong>2,100 procedures in spine institute</strong></td>
</tr>
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Spine surgery growth will be limited to programs that can **demonstrate surgical and nonsurgical value.**

- 2,100 procedures in spine institute
- 23 member physicians—ortho spine and neuro spine
- Psychiatrist and anesthesia also included
- Mix of employed and independent
- Not a 1-stop shop
- Triage results: 20% of patients go directly to surgeons.

**Note:** Analysis excludes 0–17 age group only and includes the spine service line only. Overall spine surgical forecast includes IP major therapeutic and OP major procedures groups. RF ablations, neurostimulator procedures, arthrocentesis and/or injections defined by Sg2 procedure. RF = radiofrequency.

**Sources:** Impact of Change®, 2019; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2016. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2017; The following 2017 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2019; Sg2 Analysis, 2019.

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**KEY STRATEGY**

Evolve your multidisciplinary spine program to demonstrate outcomes for nonsurgical treatment.

**PATIENT SELECTION**
- Interdisciplinary teams
- AI/use of predictive modeling

**PERIOPERATIVE**
- Preoperative education, counseling and optimization
- Opioid sparing/multimodal approaches (pre-, intra- and postsurgery)
- Postoperative support and planning
Position for Success:
Value and Transition in Orthopedics and Spine

2019 Ortho and Spine Surgery 5 Year Forecast

Elective IP & OP Hip and Knee Replacement
+38%

IP & OP Shoulder Replacement
+62%

OP Sports Medicine Procedures and Arthroscopy
+11%

IP & OP Spine Surgery
+13%

KEY STRATEGY

- Maximize physician engagement.
- Build or leverage service capabilities to capture high-growth areas while adjusting for changes in reimbursement.
- Prepare for high-acuity in hospital settings and HOPD/ASC quality comparison.
- Design your bundle strategy to capture growth and alignment across all sites of care.
- Expand sports medicine consumer strategy focusing on access, experience and personalized care.
- Evolve your multidisciplinary spine program to demonstrate outcomes for nonsurgical treatment.

Note: Analysis excludes 0–17 age group. Elective hip and knee replacement includes primary hip/knee replacement and partial knee replacement for Osteoarthritis CARE Family only. Shoulder replacement includes all orthopedic CARE Families. OP sports medicine major procedures and arthroscopy include endoscopy—arthroscopy, major procedures, and open treatment of fracture for the Musculoskeletal Injury (except for Other) and Nonspecific Musculoskeletal Pain CARE Families; ACL repair for Musculoskeletal Injury—Knee CARE Family; and rotator cuff repair for Musculoskeletal Injury—Shoulder/Elbow/Upper Arm CARE Family. IP and OP spine surgery forecast includes IP major therapeutic and OP major procedures groups. ACL = anterior cruciate ligament. Sources: Impact of Change®, 2019; HCUP National Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP) 2018, Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2017; The following 2017 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2019, Sg2 Analysis, 2019.

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QUESTIONS
Sg2’s Impact of Change Forecasts

1. Sg2 uses multiple data sources to establish baseline volumes and emerging trends.

- Clinical Trials
- Institutional Data
- Utilization Trends
- Local Case Mix
- Market Data
- Outcomes Data

2. Sg2 analyzes inputs, organizes data into clinically relevant categories.

3. Sg2 answers your questions using our multicomponent forecasts.

CARE = Clinical Alignment and Resource Effectiveness.

Sg2’s Impact of Change Forecasts

Note: CARE = Clinical Alignment and Resource Effectiveness.
Thought Leadership Defines Sg2

Sg2 Has a Legacy of Being Future Focused

Proven Projections
Sg2’s track record of accurately anticipating critical trends is unparalleled in health care.

- **2001**: Predicted rapid shift of inpatient procedure (CABG) to outpatient interventional cardiac procedure (PCI)
- **2006**: Anticipated declining inpatient NICU volumes following 30+ years of growth
- **2008**: Predicted the shift toward outpatient care when conventional wisdom suggested an inpatient boom
- **2010**: Predicted high, long-term growth in emerging endovascular procedures for ischemic stroke
- **2014**: Projected that total joint procedures would undergo a significant outpatient shift

CABG = coronary artery bypass graft; NICU = neonatal intensive care unit; PCI = percutaneous coronary intervention.
How Do You Ensure Your Market Relevance?
An Effective System of CARE

1. Size your local market and inventory your System of CARE.
2. Build the right System of CARE to meet the needs of your market.
3. Align System of CARE access channels to meet patients on their terms.

Note: CARE = Clinical Alignment and Resource Effectiveness.
Growth Strategies Start at the Foundation…

**Physician Engagement**
- Economic enhancement
- Innovation and influence
- Patient advocacy
- Physician workforce and quality of life

**Channel Management**
- Patient continuity of care
- Direct-to-employer strategies
- Payer strategies

**Service Capabilities**
- Operational effectiveness and efficiency
- System of CARE comprehensiveness
- Program recognition quality outcomes
- Nonphysician workforce
- Technology and innovation
- Program subspecialization and niche offerings

**Care Coordination**
- Quality
- Advocacy
- Navigation and virtual care
- Consumerism and access
Sg2, a Vizient company, is the health care industry’s premier authority on health care trends, insights and market analytics.

Our analytics and expertise help hospitals and health systems achieve sustainable growth and ensure ongoing market relevance through the development of an effective System of CARE.